#### AMENDED GRAFTON CAMPUS MASTER PLAN 2021

Cummings School of Veterinary Medicine at Tufts University

Grafton Planning Board
Public Hearing January 10, 2022

### Cummings School of Veterinary Medicine at Tufts University



### Cummings School of Veterinary Medicine at Tufts University Team:

- Alastair Cribb, Dean
- Joe McManus, Executive Associate Dean
- Scott Washburn, Grafton Facilities Director
- Jean Poteete, Senior Campus Planner
- Mark Borenstein, Bowditch & Dewey
- Nick Koulbanis & Erin Prestileo, SMMA

### Cummings School Profile

#### **LOCATIONS:**

- 594 Acre North Grafton, MA campus
  - Foster Hospital for Small Animals
  - Hospital for Large Animals
  - Barbour Wildlife Clinic
  - Lerner Spay and Neuter Clinic
  - Grafton Science Park
- Tufts Ambulatory Service, Woodstock, CT
- Tufts V.E.T.S., Walpole, MA
- Tufts at Tech, Worcester, MA











#### Cummings School Mission

- Education: DVM program, Master's programs, Outreach
- Research: infectious disease, global health, clinical and translational science,
- Service: regional veterinary clinical care, life sciences workforce and economic development, outreach, civic engagement

#### Programmatic Vision for the Campus

- Expanding educational programs and offerings
  - New teaching spaces
- Improving and expanding clinical facilities
- Expanding our research footprint
- Environmental Sustainability: Net Zero by 2050
- Grafton Science Park development

#### Goals

- How vision will be reflected in physical development program to be further outlined tonight
- Campus MP describes/depicts large menu and different priorities
- Full wish list of Cummings School development in next 15-20 years
- Likely not all to be developed or affordable

Intent of Amended Campus Master Plan

- History:
- Where we were in 2014 and what we proposed then
- Where we are now

- Development to Date:
- Academic Campus
- Grafton Science Park

### Existing Campus



BUILDING LEGEND

#### PROGRAM & BUILDING

SCHOOL ADMINISTRATION AND HOSPITAL

Jean Mayer Administration Building\* Franklin M. Loew Veterinary Medical Education Ctr\* Center for Animals and Public Policy\* Cummings Support Center\* Animal Behavior Clinic\* Clinical Faculty Office Building

Clinical Faculty Office Building
Central Sarvices Campus Police\*
Agnes Varis Campus Center
LAMS - Faculty Offices @ 1 Ridge Road\*
Large Animal Hospital
The Henry & Lois Foster Hospital for Small Animals

Office modulars

HLA Isolation Ward Equine Sports Medicine Complex TOTAL

RESEARCH AND GENERAL EDUCATION Veterinary Diagnostic & Testing Lab\* Laboratory Support Building (Tuffs Biotechnology Transfer

Amelia Peabody Pavilion David McGrath Veterinary Teaching Laboratory Bernice Barbour Wildlife Medicine Building New England Regional Biosafety Laboratory TOTAL

SUPPORT FACILITIES Goat Reproduction Barn I Seasonal Equipment Storage Seasonal Equipment Stora Medical Gas Storage Grain Feed Storage Barn Swine Research Center Goat Reproduction Barn II Sheep Equipment Storage Building 23 (Unheated Storage) Poultry Instructional Barn Equine Housing I Equine Housing I Sheep Instructional Barn Beef Cattle Instructional Barn Sewerage Treatment Tanks Swine Housing Unit I\* Farm Machinery Shop Sand & Salt Storage

Flight Cage Com Bin Foster Hospital for Small Ani Equine Housing II Old Pump House Hay Storage Barn Pump House Eagle Flight Cage Hospital Waste Storage Hospital Feed Storage Swine I Feed Storage Barn Avian Florkt Cane Foster Hospital for Small Animals Shed

Avian Flight Cage
TFS Equipment Storage
Universal Waste Accumulation Shed

Universal Waste Accumulation S Drining Services Storage Wildlife Equipment Storage Wildlife Equipment Storage Wildlife Equipment Storage Mildlife Equipment Storage Advancement Records Storage

BUILDING NOT NOW IN USE

EGEND EXISTING BUILDINGS



WETLANDS

BUILDING NO.

#### Cummings School in 2021

- 594 acre campus in Grafton and Westboro
- Existing buildings total 507,831 sf (incl. basements):
  - 239,990 sf- school administration/clinical 143,993 sf- research/general ed 84,778 sf-animal facilities and op support 39,070 sf-vacant facilities

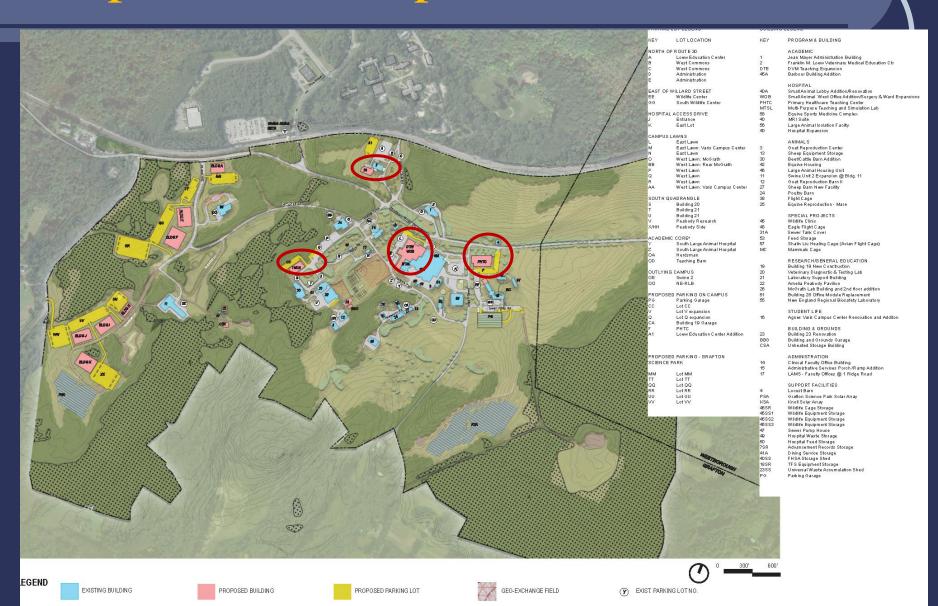
# Existing Campus: Major Projects since 2014



#### Priorities in 2021

- Differences/Similarities between 2014 and 2021 MPs:
- FHSA expansion/renovation
- Primary Healthcare Teaching Center (PHTC/UCC)
- Continual maintenance and upgrading of clinical and research facilities
- Carbon neutral projects being explored
- Other projects
- Compliance with CDO District Criteria and Guidelines

#### Proposed Development



Reliance on 2006 Traffic Analysis

- Municipal Costs and Benefits
- 2006 Nexus Study
- Updated Economic Impact Data
- Conceptual Stormwater Management Plan aligned with 2014 stormwater plan

#### Campus Development 1999-2021

Have built 153,056 sf and removed 41,297 sf for net development to date of 111,759 sf. Major projects constructed to date:

FSHA expansion; MRI suite

HLA isolation facility

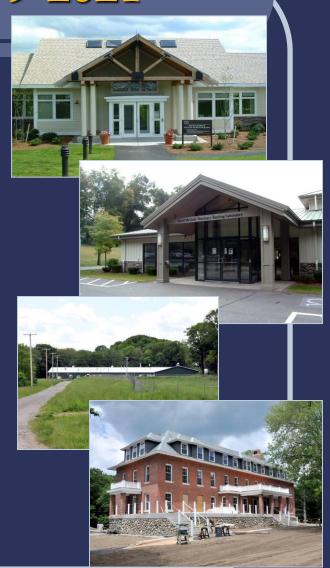
Swine #2 expansion

Barbour wildlife clinic

McGrath anatomy lab

New England Regional Biosafety Lab

Agnes Varis Campus Center



### Campus Development 1999-2021

Major projects constructed to date:

GSP and Knoll solar arrays

**Equine Sports Medicine Complex** 

Foster Hospital Lobby Renovation and Expansion

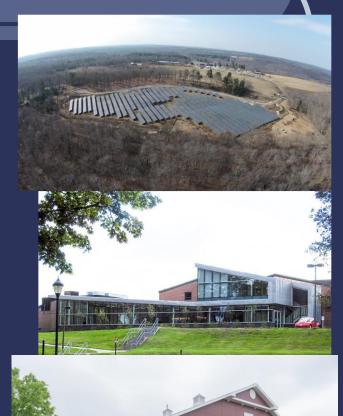
Shalin Liu Healing Cage

Space Renovations:

Peabody lab and office

Multi-Purpose Teaching and Simulation Lab

Building 8 – Animal Behavior Clinic



Overall square footages approved in 1999,
 2006 and 2014 remain the same

Several of the same projects shown

 But we have reallocated some space among categories, moved (and removed) some facilities and proposed some new facilities

Stays within already approved permitted or constructed 256,850\* development sfs (but reallocates sf): 207,311 (83,600) sf-academic/hospital ↑123,711 20,074 (31,994) sf-animal facilities \11,920 22,476 (40,996) sf-special projects (rehab cages & equine) \ \ 18,520 52,791 (78,061) sf-research/general education  $\downarrow 25,270$ \*excludes 39,071 NE-RBL in GSP

#### 2021 Reallocated SF (cont).

 Stays within already approved permitted or constructed 256,850\* development sfs of the educational campus (but reallocates sf):

24,862 (46,540) sf-student residence/recreation \$\pm\$21,678 17,704 (15,836) sf-buildings & grounds/administration \$\pm\$1,868

106,967(50,438) sf demolition ↓56,529

\*excludes 39,071 NE-RBL in GSP

#### Major Changes: 2014 →2021

- Hospital master plan proposes to add additional SF to FHSA in central academic campus
- Primary Healthcare Teaching Center
- Expanded teaching facilities
- Two projects to advance Cummings carbon neutral goals (geothermal, added solar array)
- 4 projects on 2014 (and earlier) plans no longer needed for programmatic reasons: Recreation center, Building 18 renovation, Westborough Equine Exercise Facility

Proposed Core Campus: Major Changes from 2014 Changes from 2014 EXISTING BUILDINGS PROPOSED PARKING LOT GEO-EXCHANGE FIELD BUILDING NO.

### Veterinary Hospital Additions/Renovations

- FHSA West Office Building (WOB): Spay clinic, surgery / ward expansion, learning spaces and faculty offices 75,456 sf
- DVM Teaching Expansion (DTE): Adjacent multipurpose clinical teaching spaces, student support 37,500 sf
- Primary Healthcare Teaching Center (PHTC):
   Primary and urgent veterinary care 25,000 sf

# Grafton Campus Sustainability Projects

 Geo-exchange fields proposed to be located under Phelps Field and paddock in research quad area

Heat loops

 3<sup>rd</sup> solar array contemplated for proposed structured parking facility roof or as part of knoll array

Other proposed square footages & facilities

 Part of the 207,311 sf - academic/hospital development:

New Loew expansion (2A) now 30,200 sf

New center for animals (6A) still 5,000 sf but may be incorporated in 2A or PHTC

New Barbour addition (45A) still 3,000 sf

 20,074 sf - animal facilities: Staying within or reducing existing footprints

Other proposed square footages and facilities

22,476 sf - special projects:
 Only 1,000 sf new mammals cage (MC) remains

• 52,791 sf - research/general education:

New building #19, but expanded footprint 38,700 sf

- Other proposed square footages and facilities
- 24,862 sf student residence/recreation:
  - Recreation center no longer planned no additional construction to occur in this category
- 17,704 sf buildings and grounds/administration:
   New unheated storage building (CSA)
   New B&G (BBG) now has expanded footprint
- 106,967 sf 56,529 sf in additional building demo has occurred or is also planned

#### 1999-2021 Science Park Program

Broad space estimates, for planning purposes, we continue to show:

- Phase I-348,000 sf with NE-RBL and 3
   buildings with floorplates of 60K 128K sf
- Phase II-354,000 sf with solar array and sf allocated into 4 buildings
- Phase II proposes to incorporate Swine 1 facility area

#### Proposed Development: GSP



#### 1999-2021 Science Park Program

- Total square feet for each phase would depend on the market for biomedical, life sciences, high tech, alternative renewable energy development over the estimated 20-year development time horizon
- Offices, laboratories, animal housing, pilot manufacturing, and accessory facilities, as permitted by zoning, are envisioned

### Infrastructure Progress in Grafton Science Park

- Phase I roadway, water and sewer, redundant power and natural gas infrastructure
- Tufts and Grafton partnered to secure \$2 million in state grants for this work:
- Discovery Drive road construction
- 12" water loop through property
- Extension of sewer line to 14" sewer main on campus

#### Progress in Grafton Science Park

Continue active marketing to corporate prospects

Working with JLL, MassDevelopment,
 MassMedic, MassBio, MassEcon

Platinum "Bioready Community"; 43D designated site

### Compliance with Zoning Design Criteria and Guidelines

- 2021 Campus Master Plan complies with all requirements of O/LI and CDOD:
- Uses proposed comply with all zoning and overlay districts

- Compliance with all dimensional regulations, e.g setbacks, height limitations
  - -FAR (allowed .35; show .07)
  - -% Ground Coverage (allowed 60%; show 13-29%)

#### 2006 Traffic Study

- Relied on 2006 study since still haven't (in 2021) reached the development thresholds predicted in 2006 traffic study for 2011
- Background traffic volumes from conversion to hybrid and remote work assumed to be another mitigating factor
- Planning Board has option to ask for traffic study when it reviews an actual project during project plan review.

#### Municipal Costs and Benefits

- 2006 Nexus Associates: Economic Impact of the Veterinary School
- School's activities also contribute significantly to the local economy
  - -Its expenditures and planned investment (both on the academic campus and in the park) will contribute over 900 jobs annually
  - -Generate nearly \$460M in output and
  - \$195M in disposable personal income over a seven year period

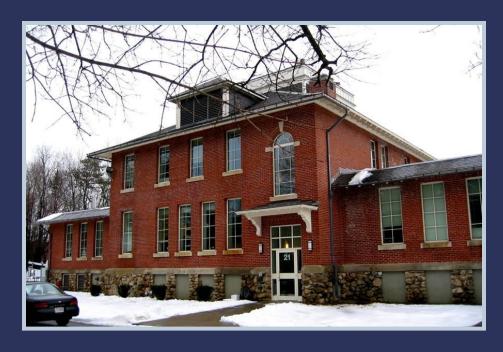
#### Municipal Costs and Benefits

- All Grafton employees, including Central depts.: 499
   with \$30.9M annual payroll (FY21)
- Grafton annual property taxes and contribution payment: \$107,293 (FY21)
- With successful park development, projected private investment in Phase I is now estimated at \$185M-\$247M, to generate \$3.2 \$4.2 M in property tax revenues

#### Life Science Business Incubation

### Tufts Biotechnology Transfer Center

#### The following companies have incubated on Tufts Cummings School of Veterinary Medicine's campus



Company	Field
Aeris Therapeutics	Pulmonary Therapy
Alpha Preclinical	Contract Research
Antigenics	Antisense
Astellas Inst. for Regenerative Med.	Regenerative Medicine
Axol Bioscience	Specialized Human Cells
Battery Resourcers, LLC	Battery R & D
BioBoston Contract Laboratories	Contract Research
Biovalve	Medical Devices
Boston Biokeys	Contract Research
Capsule Technologies	Pilot Fermentation
CHI Scientific, Inc.	Cell Culture
Circe Biomedical	Xenotransplantation
CogniScent	Sensing and Detection
Cyagra	Transgenics - Cloning
DetectoGen	Infectious Diseases
Diacrin	Xenotransplantation
Encelle	Xenotransplantation
GTC Biotherapeutics	Transgenics
IDEXX Veterinary Services	DiagnosticTesting
Imutran U.S.A.	Xenotransplantation
Midas Biologicals	Transgenics
OncoTherapeutica, Inc.	Oncology Research
Olympus	Orthopedics
Pulmonary Metrics	Diagnostic Imaging
Securos	Surgical Devices
Sequitur	Biotechnology
Stryker Biotech	Orthopedics
Valley Cross Consulting	Contract Research
Verigen	Immunotherapy
Vivo Rx	Xenotransplantation
Vivtex Corp.	Drug Delivery R & D
Woodland Pharmaceutical	Oncology Research
XenoTherapeutics	Xenotransplant Research

# Conceptual Stormwater Plan Erin Prestileo, P.E. SMMA

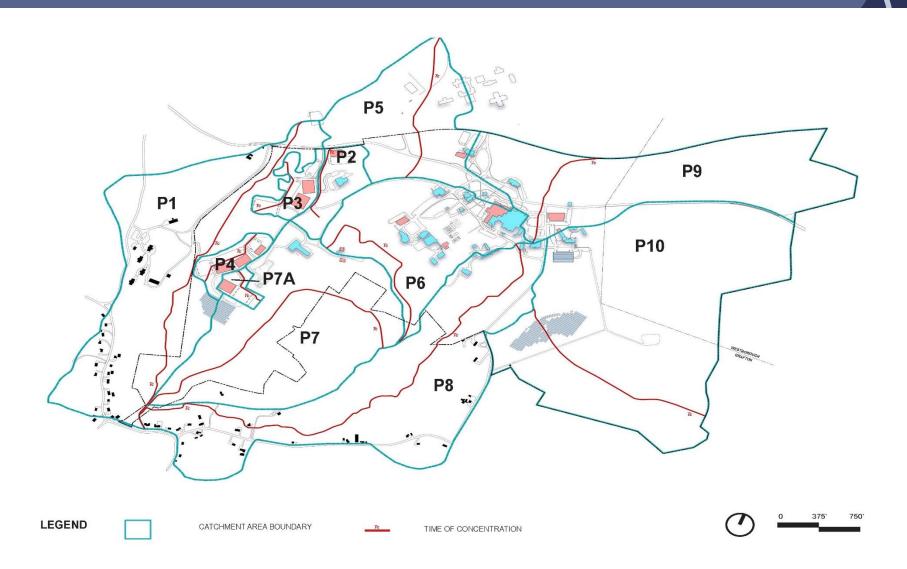
#### Conceptual Stormwater Plan

- Update of 2014 Stormwater Management Plan
- Evaluates existing and proposed campus development associated with 2021 Campus Master Plan
- Identifies SW management recommendations and criteria for future campus development
- Consistent with Grafton Stormwater
   Management Bylaw and Regulations and MA
   Stormwater Management Standards

#### Conceptual Stormwater Plan - Model

- Campus-wide hydrologic model
  - Peak runoff rate, volume, and timing
  - Existing and proposed campus development
  - Requirements of Grafton SW Regulations
- Major subwatersheds
  - Axtell Brook
  - Assabet River
  - Southeast Wetlands
- Land cover and soil type

#### Conceptual Stormwater Plan - Model



### Conceptual Stormwater Plan - Recommendations

- Campus-wide and site-specific recommendations
- Use of Low Impact Development (LID)
  - Effective site planning and design
  - Structural BMPs
- Consider using:
  - Infiltration and vegetative LID measures
  - Surface or subsurface detention, when necessary
- More detailed analysis, design & review of individual Master Plan projects

## Conceptual Stormwater Plan - Recommendations



Pervious Pavement and Subsurface Detention





Grass Swales and Leakoffs





Bioretention and Rain Gardens



### Questions?

